UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

APR - 3 2017

OFFICE OF
AIR AND WASTE

Reply to: AWT-150

Mr. Brian Anderson
Company Energy & Environmental Affairs
The Boeing Company
P.O. Box 3707, M/C 2R96
Seattle, Washington 98124-2207

Re: Risk-based Disposal Approval for the Boeing Plant 2 Other Area 11 (OA-11) Jorgensen Forge Additional Characterization, TSCA ID No. WAD 00925 6819

Dear Mr. Anderson:

This letter constitutes approval under the authority of 40 Code of Federal Regulations (C.F.R.) § 761.61(c) for the sampling and analysis of certain polychlorinated biphenyl (PCB) remediation waste associated with The Boeing Company (Boeing) Plant 2 facility in Seattle, Washington. More specifically, this approval authorizes Boeing, with respect to the requirements for sampling of PCB remediation waste at 40 C.F.R. § 761.61(c), to conduct additional characterization sampling and analysis of bulk PCB remediation waste on property owned by Star Forge dba Jorgensen Forge (Jorgensen Forge) and located immediately south of and adjoining the OA-11 Interim Measure located at the Boeing Plant 2 facility. Under this approval, Boeing is the operator responsible for conducting the approved work. This letter also documents the U.S. Environmental Protection Agency, Region 10 (EPA)'s evaluation of those project elements which will be conducted under requirements of 40 C.F.R. Part 761 other than § 761.61(c). This approval and the EPA's evaluation of the project under the Toxic Substance Control Act (TSCA) is wholly contingent upon the EPA written approval of all phases and aspects of the project pursuant to the Resource Conservation and Recovery Act (RCRA) corrective action Administrative Order on Consent, EPA Docket No. 1092-01-22-3008(h) (Boeing Order, Reference 1[1]).

Background

Boeing is conducting Uplands Corrective Measures at Boeing Plant 2, located in Seattle and Tukwila, Washington, pursuant to the Boeing Order. As outlined in the draft Upland Corrective Measures Study Volume X (CMS) submitted under the Boeing Order, Plant 2 has been divided into nine Remediation Areas (RAs). Other Area-11 (OA-11), an area of surface and subsurface soil contamination located near the southwest corner of the Plant 2 facility, is within the boundaries of RA 9. A Draft Focused Corrective Measure Study (FCMS) for OA-11 was submitted to the EPA in October 2014 (Reference 2) as required under the Boeing Order.

[1] All references are documented in Enclosure 1.

Development and implementation of the OA-11 Interim Measure is being conducted in a phased process. Previously, the EPA issued a written risk-based disposal approval (RBDA) to conduct additional characterization sampling to supplement historical characterization data (Reference 3). This work was performed to refine the anticipated scope of cleanup and to obtain data to be used for purposes of segregating contaminated soils for purposes of disposal. This work was also performed to obtain data that could be used to demonstrate compliance with proposed Final Media Cleanup Levels (FMCLs) where anticipated construction methods would preclude excavation sidewall sampling following Interim Measures construction. Based on the October 2014 FCMS noted above and results of work conducted under the additional characterization approval, Boeing developed an Interim Measures work plan for OA-11 (References 4 and 5)[2]. Interim measures field work was conducted pursuant to a risk-based disposal approval dated August 31, 2016 (Reference 6) and a corresponding RCRA approval under the Boeing Order.

During interim measures construction, Boeing obtained verification sampling data that indicated additional contamination remained above proposed FCMLs south of a portion of OA-11 at the Boeing facility on the neighboring property owned by Jorgensen Forge. Consultation at the project manager level between Boeing and the EPA during interim measure field work concluded that the nature and extent of these additional PCBs was not known and did not appear to be consistent with the conceptual site model (CSM) upon which the OA-11 interim measures approval was based. Therefore, Boeing and the EPA mutually agreed to defer further cleanup work until additional field sampling activities have been completed under this approval to provide a basis for those additional cleanup measures that may be necessary. Boeing provided the EPA with a request for a RBDA for this additional field sampling on February 10, 2017 (Reference 7). Once characterization data under this approval is available, Boeing is expected to propose such additional cleanup activities as may be necessary to achieve compliance with proposed FMCLs in a subsequent RBDA application.

The EPA's Office of Land and Emergency Management (OLEM) policy states that all cleanups should be protective of human health and the environment, which extends to the environmental footprint of cleanup activities. Accordingly, the EPA requests that Boeing review Section 6 of the ASTM Standard Guide for Greener Cleanups (Active Standard ASTM E2893-16e1) to identify Best Management Practices (BMPs) which may be applicable to the OA-11 cleanup and implement those practices which Boeing identifies as being feasible to implement. The cleanup completion report required by Condition 5 of this approval should include a section on BMP Documentation, as described in Section 6.6.5 of the ASTM Standard.

This written decision for a risk-based method for the cleanup, sampling and disposal of PCB remediation waste is based on Boeing's application for an RBDA and the documentation identified in Enclosure 1. This written decision is issued to Boeing, the owner and operator of the Plant 2 facility and the operator conducting work under this approval, who has overall responsibility for implementation of this authorized work. All sections of the RBDA application, including those referenced in this approval, are incorporated by reference. In granting this approval, the EPA finds that the proposed sampling of PCB remediation waste, subject to the conditions below, will not pose an unreasonable risk of injury to

[2] The Interim Measures work plan included a discussion of the nature and extent of certain PCB contamination at the Jorgensen Forge Outfall Site (JFOS) adjoining the Boeing OA-11 area. This discussion was included for purposes of differentiating between PCB contamination associated with the OA-11 area subject to this approval and unrelated PCB contamination associated with the JFOS. Nothing in the interim measures risk-based disposal or elements from the Interim Measure work plan incorporated into it is to be construed as establishing a decision related to any aspect of JFOS work that has been or may be made pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

health or the environment. Boeing shall ensure that activities conducted pursuant to this approval are in full compliance with conditions of the approval. The terms and conditions of this approval are established pursuant to 40 C.F.R. § 761.61(c) and are enforceable under TSCA. Any actions which deviate from the terms and conditions of this approval may result in administrative, civil, or criminal enforcement in accordance with Sections 16 and 17 of TSCA, 15 U.S.C. §§ 2615 and 2616.

Conditions

1. Boeing is authorized to perform sampling and analysis of bulk PCB remediation waste adjoining Other Area-11 (OA-11) on Jorgensen Forge property, as documented in Boeing's February 10, 2017, RBDA application and as approved by the EPA under the Boeing Order (Reference 1). Work under this approval must be completed within six (6) months of the date of the approval. Boeing may request an extension to these dates pursuant to Condition 11. This authorization is contingent on receipt by the EPA of a copy of the access agreement between Boeing and Star Forge dba Jorgensen Forge under which work on Jorgensen Forge property will be conducted. This requirement may be satisfied by a submittal to the EPA of an access agreement under Section XIII paragraph 13.1 of the Boeing Order.

2. Boeing is authorized to dispose of bulk PCB remediation waste, including debris, with PCB concentrations < 50 ppm, as well as cleanup wastes as described at 40 C.F.R. § 761.61(a)(5)(v), in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 C.F.R. Part 258, or municipal non-hazardous waste subject to 40 C.F.R. §§ 257.5 through 257.30, as applicable.

3. Boeing is authorized to dispose of bulk PCB remediation waste, including debris, with as-found PCB concentrations ≥ 50 ppm in a hazardous waste landfill permitted by the EPA under section 3004 of RCRA, or by a State authorized under section 3006 of RCRA, or a PCB disposal facility approved under 40 C.F.R. § 761.75.

4. All equipment that has been in contact with liquid or non-liquid PCB remediation waste subject to this approval must be disposed of or decontaminated following the completion of work under this approval. All disposable equipment or materials must be disposed of in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 C.F.R. Part 258, or municipal non-hazardous waste subject to 40 C.F.R. §§ 257.5 through 257.30, as applicable. Non-disposable equipment must be decontaminated using mechanical means or pressure washing to achieve a "clean debris surface" as defined in 40 C.F.R. § 268.45, Table 1, footnote 3, or according to the applicable decontamination standards of 40 C.F.R. §761.79.

   Boeing will ensure that any decontamination conducted pursuant to this approval will be in compliance with the requirements of 40 C.F.R. § 761.79(e)-(g).

5. No later than 60 days following completion of field work, Boeing must provide the EPA with a written project completion report documenting compliance with requirements of this approval. This requirement may be satisfied in whole or part with reporting requirements applicable under the Boeing Order (Reference 1).

6. Boeing will ensure that all field work associated with this project conducted by Boeing or its contractors is conducted under written site-specific health and safety plans. Boeing will ensure that these plans document appropriate training and personal protective equipment required for all

personnel that may be exposed to PCBs during work associated with this project. Boeing will make available copies of such plans to the EPA upon request.

7. Boeing will ensure that a copy of this approval is provided to contractors responsible for conducting work subject to requirements of the approval. Boeing will ensure that any contracts it issues are consistent with the requirements of this approval. Boeing is responsible for ensuring compliance with this TSCA RBDA and all applicable requirements of 40 C.F.R. Part 761.

8. Nothing in this approval relieves Boeing of any obligation to comply with the Boeing Order, any other EPA or Ecology administrative action, or any statutory requirements, or rules or regulations applicable to the activities subject to this approval.

9. Within seven (7) days following the effective date of this approval, Boeing will provide the EPA with written or e-mail notice of its project manager responsible for overall implementation of work subject to this approval. The initial EPA TSCA project manager is identified in Condition 12. The respective project managers will be responsible for timely and routine communication regarding implementation of this approval, including notification pursuant to Condition 10. For matters otherwise reportable to the EPA RCRA project manager under the Boeing Order, concurrent notification via e-mail is acceptable and encouraged.

10. If at any time before, during, or after conduct of activities subject to this approval, Boeing possesses or is otherwise made aware of any data or information (including but not limited to site conditions that differ from those presented in the application) that activities approved herein may pose an unreasonable risk of injury to health or the environment, Boeing must report such data or information via facsimile or e-mail to the EPA within five (5) working days at the project manager level, and in writing to the Regional Administrator within thirty (30) calendar days of first possessing or becoming aware of such data or information. At his or her sole discretion, the EPA project manager may waive the written reporting requirement for those issues that are determined to be minor, or can be timely resolved without modification of this Approval. Boeing shall also report in the same manner, new or different information related to a condition or any element of the approved activities if the information is relevant to this approval. The EPA may direct Boeing to take such actions it finds necessary to ensure the approved activities do not pose an unreasonable risk of injury to health or the environment. Boeing shall follow such direction until written approval is obtained from the EPA that finds the condition(s) requiring such direction no longer poses an unreasonable risk of injury to health or the environment.

11. The EPA reserves the right to modify or revoke this approval based on information provided pursuant to Condition 10, or any other information available to the EPA that provides a basis to conclude that activities covered by this approval pose an unreasonable risk of injury to health or the environment. Boeing may request modification of this approval by providing a written request to the EPA. If the EPA agrees with a request for modification, the EPA will provide written approval to Boeing. Prior to obtaining written approval of a modification request, Boeing shall comply with the existing approval conditions.

12. Submissions required by this approval shall be provided to the EPA as follows:

    Mr. Timothy B. Hamlin
    Director
    Office of Air and Waste

U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 900, MS OAW-150
Seattle, Washington 98101
E-mail: hamlin.tim@epa.gov
Facsimile: (206) 553-8509

With copies to the EPA Project Manager:

Dr. Dave Bartus
Office of Air and Waste
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1200 Sixth Avenue, Suite 900, MS OAW-150
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Facsimile: (206) 553-8509

Should you have any questions or comments, please contact Dave Bartus at (206) 553-2804 or bartus.dave@epa.gov.

Sincerely,

Tim Hamlin

Timothy B. Hamlin
Director

Enclosures

1. References
2. Statement of Basis

cc: Mr. Will Ernst
The Boeing Company

Mr. Miles Dyer
Jorgensen Forge

Mr. Hideo Fujita
Ecology Northwest Regional Office

Enclosure 1
References

1) Resource Conservation and Recovery Act (RCRA) Administrative Order on Consent, EPA Docket No. 1092-01-22-3008(h).
2) Draft Work Plan, "Uplands Corrective Measures Study Volume X: Corrective Measures Study Report – Plant 2, Attachment 1B, Focused Corrective Measure Study for OA-11", Floyd|Snider, dated October, 2014.
3) Letter, "Risk-based Disposal Approval for the Boeing Plant 2 Other Area 11 (OA-11), Additional Characterization for OA-11 Interim Measures, TSCA ID No. WAD 00925 6819," Edward J. Kowalski, Director, EPA Region 10 Office of Compliance and Enforcement to Brian Anderson, The Boeing Company, dated July 6, 2016.
4) Letter, "Plant 2 - OA-11 Interim Measure, 40 CFR 761.61(c) Risk-Based Disposal Approval Application and Interim Measure Work Plan Submittal, Boeing Plant 2, WAD 00925 6819, RCRA Docket #1092-01-22-3008(h)," Brian Anderson, The Boeing Company to Edward Kowalski, EPA, dated August 16, 2016.
5) Work Plan, "Boeing Plant 2, Interim Action Work Plan for OA-11," FloydlSnider, dated August, 2016.
6) Letter, "Risk-based Disposal Approval for the Boeing Plant 2 Other Area 11 (OA-11) Interim Measures, TSCA ID No. WAD 00925 6819," Timothy Hamlin, Director, EPA Region 10 Office of Air and Waste to Brian Anderson, The Boeing Company, dated August 31, 2016.
7) Letter, "Boeing Plant 2, Technical Memorandum Work Plan, Boeing Plant 2, WAD 00925 6819, RCRA Docket #1092-01-22-3008(h)," Brian Anderson, The Boeing Company to Tim Hamlin, EPA, dated February 10, 2017.
8) Work plan, "Work Plan for Polychlorinated Biphenyl Soil Characterization on Jorgensen Forge Adjoining OA-11," Floyd|Snider, dated February 10, 2017.

Enclosure 2
Statement of Basis

Introduction

Boeing is conducting Uplands Corrective Measures at Boeing Plant 2, located in Seattle and Tukwila, Washington, pursuant to the Boeing Order. As outlined in the draft Upland Corrective Measures Study Volume X (CMS) submitted under the Boeing Order, Plant 2 has been divided into nine Remediation Areas (RAs). Other Area-11 (OA-11), an area of surface and subsurface soil contamination located near the southwest corner of the Plant 2 facility, is within the boundaries of RA 9. A Draft Focused Corrective Measure Study (FCMS) for OA-11 was submitted to the EPA in October 2014 (Reference 2) as required under the Boeing Order.

Development and implementation of the OA-11 Interim Measure is being conducted in a phased process. Previously, the EPA issued a written (RBDA) to conduct additional characterization sampling to supplement historical characterization data (Reference 3). This work was performed to refine the anticipated scope of cleanup and to obtain data to be used for purposes of segregating contaminated soils for purposes of disposal. This work was also performed to obtain data that could be used to demonstrate compliance with proposed Final Media Cleanup Levels (FMCLs) where anticipated construction methods would preclude excavation sidewall sampling following Interim Measures construction. Based on the October 2014 Draft FCMS noted above and results of work conducted under the additional characterization approval, Boeing developed an Interim Measures work plan for OA-11 (References 4 and 5)[3]. Interim measures field work was conducted pursuant to an RBDA approval dated August 31, 2016, (Reference 6) and a corresponding RCRA approval under the Boeing Order.

During work under interim measures construction, Boeing obtained verification sampling data that indicated additional contamination remained above proposed FMCLs south of a portion of OA-11 at the Boeing facility on the neighboring property owned by Star Forge dba Jorgensen Forge (Jorgensen Forge). Consultation at the project manager level between Boeing and the EPA during interim measure field work concluded that the nature and extent of these additional PCBs was not known and did not appear to be consistent with the conceptual site model (CSM) upon which the OA-11 interim measures approval was based. Therefore, Boeing and the EPA mutually agreed to defer further cleanup work until additional field sampling activities have been completed under this approval to provide a basis for those additional cleanup measures that may be necessary. Boeing provide the EPA with a request for an RBDA for this additional field sampling on February 10, 2017 (Reference 7).

The EPA's Evaluation of Boeings Risk-Based Disposal Approval Application

In evaluating Boeing's request for an RBDA, the EPA has considered the following issues:

- Relationship to the RCRA corrective action process;
- Summary of TSCA Requirements;

[3] The Interim Measures work plan included a discussion of the nature and extent of certain PCB contamination at the Jorgensen Forge Outfall Site (JFOS) adjoining the Boeing OA-11 area. This discussion was included for purposes of differentiating between PCB contamination associated with the OA-11 area subject to this approval and unrelated PCB contamination associated with the JFOS. Nothing in the interim measures risk-based disposal or elements from the Interim Measure work plan incorporated into it is to be construed as establishing a decision related to any aspect of JFOS work that has been or may be made pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

- Scope of the requested approval;
- Specific elements of the cleanup project.

Relationship to the RCRA Corrective Action Process

As noted in the Introduction section, all aspects of cleanup at the Boeing Plant 2 facility are being managed as corrective actions under RCRA through the Boeing Order. Pursuant to this authority, Boeing has performed site characterization as necessary to document the nature and extent of contamination in the project area and identified OA-11 interim measures necessary to protect human health and the environment. Corrective action under the Boeing Order addresses any hazardous waste as defined in Section 1004(5) of RCRA, which includes PCBs.

Summary of TSCA requirements

As discussed in the section "Scope of the Requested Approval," soils within the project area are generally considered to meet the definition of PCB remediation waste and are subject to the requirements for sampling, cleanup and disposal of PCB remediation waste at 40 C.F.R. § 761.61. Under 40 C.F.R. § 761.61, spills or releases of PCBs may be cleaned up using the self-implementing procedures of 40 C.F.R. § 761.61(a), PCB remediation waste may be disposed of (or in some cases, managed) under the performance-based standards of 40 C.F.R. § 761.61(b), or the sampling, cleanup, storage and disposal of PCB remediation waste may be conducted under a risk-based disposal approval issued by the EPA pursuant to 40 C.F.R. § 761.61(c). With respect to the OA-11 additional characterization work and expected interim measures, the self-implementing authority of 40 C.F.R. §761.61(a) is applicable. However, for purposes of optimizing work requirements and to assist in fully harmonizing the requirements under RCRA and TSCA applicable to this project, Boeing is electing to seek approval of more practicable requirements under the risk-based disposal authority of 40 C.F.R. §761.61(c). In some instances, decontamination of PCB remediation waste and water that has been in contact with PCB remediation waste may be accomplished according to decontamination standards and authorization at 40 C.F.R. § 761.79.

Scope of the requested approval

Under TSCA, soils within the project scope that have been impacted by PCBs satisfy the definition of "PCB Remediation Waste" at 40 C.F.R. § 761.3. This definition includes the following elements:

- Materials disposed of prior to April 18, 1978, that are currently at concentrations ≥ 50 ppm PCBs, regardless of the concentration of the original spill;

- Materials which are currently at any volume or concentration where the original source was ≥ 500 ppm PCBs beginning on April 18, 1978, or ≥ 50 ppm PCBs beginning on July 2, 1979; and

- Materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under [40 C.F.R Part 761].

The TSCA regulations include a provision at 40 C.F.R. 761.50(b)(3)(iii) that states:

> "The owner or operator of a site containing PCB remediation waste has the burden of proving the date that the waste was placed in a land disposal facility, spilled, or otherwise released into the environment, and the concentration of the original spill."

Boeing's RBDA application does not provide documentation of either the source concentration or the date(s) of spills or releases that have impacted the OA-11 project area. In these circumstances, the EPA conservatively assumes that all media/materials affected by a spill or release meet the definition of PCB remediation waste and must be cleaned up and disposed of according to the requirements of 40 C.F.R. § 761.61. On this basis, the EPA considers all soils subject to cleanup under the Boeing Order within the OA-11 project area and extending onto the adjoining Jorgensen Forge property to meet the definition of PCB remediation waste and subject to requirements of this approval.

As part of the OA-11 excavation, two soil samples were collected immediately prior to excavation from approximately four feet below grade surface (bgs) on the south side of the 8-foot-deep excavation area. Both samples had PCB concentrations greater than 50 ppm. After excavation to the planned extents, additional samples were collected approximately two feet south of the first set of sidewall samples to determine the amount of over-excavation that would be necessary to achieve the proposed FMCL. Samples were collected at approximately 3 feet and 6 feet bgs at each location. These samples also exceeded the FMCL, with a maximum PCB concentration of 762 ppm on the southwest side of the excavation. These data were not consistent with the CSM that served as the basis for the approved interim measures, which projected that soil PCB concentrations would decrease, not increase, on the south side of the 8-foot-deep excavation area. Therefore, the EPA and Boeing project managers agreed to terminate the 8-foot-deep excavation at its planned southern extent on the neighboring Jorgensen Forge property according to the approved soil excavation interim measures and to conduct additional nature and extent characterization as necessary to plan the horizontal and vertical limits of additional excavation on the Jorgensen property that would be necessary to achieve proposed FMCLs. This RBDA, the third element of the phased approach to OA-11 interim measures, addresses Boeing's proposal to obtain these data.

Specific elements of the requested approval

A general discussion of the overall scope and elements of the OA-11 interim measures projects is documented in the two previous RBDAs issued to Boeing (References 3 and 6). The EPA considered the following specific elements of Boeing's requested approval:

- Intended use of additional characterization data
- Sampling design
- Relationship between Boeing and Jorgensen Forge

The EPA analysis of each of these specific elements is documented in the following sections.

Intended use of additional characterization data

As noted in the statement of basis Introduction, the purpose of this additional characterization work is to define the vertical and horizontal limits of additional PCB contamination adjacent to the OA-11 area on Jorgensen Forge property for purposes of defining the anticipated scope of cleanup and to obtain data to be used for purposes of segregating contaminated soils for purposes of disposal during subsequent cleanup. Based on its review of Boeing's application for an RBDA, the EPA has determined that the proposed sampling, including the sampling design discussed below, is consistent with this intended use of the resulting data.

Sampling design

Boeing has proposed to advance a total of 13 soil borings, as documented in Figure 6 of the RBDA application, to be advanced on the Jorgensen property to a target depth of 14 feet bgs. Soil samples will be collected from discrete intervals within each core.

One boring is proposed adjacent to sample OA-11-ex-S7, which has the greatest PCB concentrations, to further define the vertical profile of PCB concentrations greater than 50 ppm and to better define the area that will require soil segregation for Subtitle C landfill disposal in accordance with TSCA. This soil boring will be collected adjacent to, but outside, the area that was previously sampled, to allow undisturbed soil sample collection. Soil samples will be collected continuously (in 2-foot intervals) from this boring, from the ground surface to a terminal depth of 14 feet bgs. Initially, only samples from the shallow intervals (0 to 8 feet bgs) will be analyzed; deeper soil samples from the deeper intervals (i.e., 8 to 14 feet bgs) will be archived at the laboratory. If results from the initial four analyses do not clearly indicate that PCB concentrations are less than 50 ppm or if additional vertical delineation is warranted (i.e., concentrations remain greater than the FMCL), archived samples from the deeper interval(s) will also be analyzed for PCBs to provide a more complete vertical concentration profile. Total PCB data will be compared to the TSCA disposal segregation criterion of 50 ppm to establish the disposal pathway (i.e., Subtitle C landfill versus Subtitle D landfill) and the proposed FMCL (10 ppm) to confirm the necessary depth of additional excavation.

Twelve additional soil borings will be advanced on the Jorgensen property to determine the lateral and vertical extent of PCBs beyond the southern extent of the OA-11 interim measure excavation to verify that future proposed excavation will ensure all soils with PCB concentrations greater than the proposed FMCL will be excavated. These data will also help further define the lateral extent of PCB concentrations greater than 50 ppm to better define the area that will require segregation as Subtitle C in accordance with TSCA. Soil samples will be collected from each soil boring, consistent with the soil sampling scheme described in Section 3.2 of the RBDA application at proposed locations shown on Figure 6 in the application. The proposed borings are in the immediate vicinity of both the 12-inch-diameter and 24-inch-diameter property line pipes, which are also shown on Figure 6.

Based on its review of Boeing's application, the EPA has determined that this sampling design is defensible and is expected to provide data of sufficient quality and quantity for their intended use. Because the CSM associated with additional PCBs found on Jorgensen Forge property adjacent to the OA-11 interim measures area is not fully understood, it is possible that the approved sampling will not fully delineate the extent of PCB contamination for purposes of developing a subsequent cleanup action. If this is the case, the EPA will require Boeing to request a modification to this approval as necessary and appropriate.

Relationship between Boeing and Jorgensen Forge

As the owner and operator of the Plant 2 facility, Boeing has been responsible for conducting cleanup at the OA-11 portion of the facility under the Boeing Order and the corresponding series of RBDAs under TSCA. This work has included limited cleanup under the approved OA-11 interim measures (Reference 6) on Jorgensen Forge property.

Work under this approval will similarly be conducted by Boeing, although Boeing is not the owner of the property. This approach is consistent with the requirements of 40 C.F.R. § 761.61(c), which allow:

"Any person wishing to sample, cleanup, or dispose of PCB remediation waste..."

to apply for an RBDA. The EPA interprets this language to allow Boeing to apply to the EPA for approval of this RBDA. To ensure that this work is fully coordinated with Star Forge dba Jorgensen Forge (Jorgensen Forge), the property owner, the EPA has requested that Boeing provide documentation that an access agreement is in place that covers the scope of the additional characterization work. This documentation is cited in Reference 9.

The Jorgensen Forge facility, located south of the Boeing Plant 2 facility, is subject to cleanup requirements under the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the state of Washington Model Toxics Control Act (MTCA). The EPA intends that work under this RBDA and as approved under the Boeing Order will be consistent with these other cleanup programs. The EPA has determined that information from the characterization work under this approval will be adequate to establish subsequent cleanup requirements that are appropriately coordinated with CERLCA and MTCA. The EPA will document specifics of how subsequent cleanup work will be integrated with CERCLA and MTCA in an expected future RBDA.

Work under previous OA-11 RBDAs involving work on Jorgensen Forge has been conducted under an existing access agreement between Boeing and Jorgensen Forge. The EPA understands that Boeing and Jorgensen Forge are negotiating a new access agreement. Boeing has advised the EPA that if the new access agreement is not in place as of the start of work under this approval, the existing access agreement will be adequate to provide the necessary access to conduct the approved activities.

Discussion of Conditions

1. Boeing is authorized to perform sampling and analysis of bulk PCB remediation waste adjoining Other Area-11 (OA-11) on Jorgensen Forge property, as documented in Boeing's February 10, 2017, RBDA application and as approved by the EPA under the Boeing Order (Reference 1). Work under this approval must be completed within six (6) months of the date of the approval. Boeing may request an extension to these dates pursuant to Condition 11. This authorization is contingent on receipt by the EPA of a copy of the access agreement between Boeing and Star Forge dba Jorgensen Forge under which work on Jorgensen Forge property will be conducted. This requirement may be satisfied by a submittal to the EPA of an access agreement under Section XIII paragraph 13.1 of the Boeing Order.

This condition provides overall authorization for the additional sampling work on Jorgensen property, and establishes a time frame for completion of work. This condition also ensures that work does not begin until Boeing has secured an access agreement with Star Forge dba Jorgensen Forge, the current owner of the facility.

2. Boeing is authorized to dispose of bulk PCB remediation waste, including debris, with PCB concentrations < 50 ppm, as well as cleanup wastes as described at 40 C.F.R. § 761.61(a)(5)(v), in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 C.F.R. Part 258, or municipal non-hazardous waste subject to 40 C.F.R. §§ 257.5 through 257.30, as applicable.

3. Boeing is authorized to dispose of bulk PCB remediation waste, including debris, with as-found PCB concentrations ≥ 50 ppm in a hazardous waste landfill permitted by the EPA under section 3004 of

RCRA, or by a State authorized under section 3006 of RCRA, or a PCB disposal facility approved under 40 C.F.R. § 761.75.

These conditions establish disposal requirements for any PCB remediation waste, such as excess soils from soil probes, and cleanup wastes, such as discarded sampling equipment and personal protective equipment. Although 40 C.F.R. § 761.61(a) provides similar authorizations for bulk PCB remediation waste generated from self-implementing cleanups, this project is not being conducted under the authority of 40 C.F.R. § 761.61(a). Nevertheless, these methods of final disposal are appropriate for PCB remediation waste to be generated by this project, so the EPA is establishing the disposal authorizations in these Conditions under the risk-based disposal approval authority of 40 C.F.R. § 761.61(c). This condition also includes authorization for disposal of cleanup wastes, such as decontamination liquids, personal protective equipment and other contaminated equipment associated with sampling activities.

4. All equipment that has been in contact with liquid or non-liquid PCB remediation waste subject to this approval must be disposed of or decontaminated following the completion of work under this approval. All disposable equipment or materials must be disposed of in a facility permitted, licensed or registered by a State to manage municipal solid waste subject to 40 C.F.R. Part 258, or municipal non-hazardous waste subject to 40 C.F.R. §§ 257.5 through 257.30, as applicable. Non-disposable equipment must be decontaminated using mechanical means or pressure washing to achieve a "clean debris surface" as defined in 40 C.F.R. § 268.45, Table 1, footnote 3, or according to the applicable decontamination standards of 40 C.F.R. §761.79.

   Boeing will ensure that any decontamination conducted pursuant to this approval will be in compliance with the requirements of 40 C.F.R. § 761.79(e)-(g).

This condition ensures that all equipment, such as drilling and sampling equipment are appropriately managed during and following completion of approved characterization sampling activities.

5. No later than 60 days following completion of field work, Boeing must provide the EPA with a written project completion report documenting compliance with requirements of this approval. This requirement may be satisfied in whole or part with reporting requirements applicable under the Boeing Order (Reference 1).

This condition ensures that documentation is available that provides a record for the EPA to evaluate compliance with requirements of this approval.

6. Boeing will ensure that all field work associated with this project conducted by Boeing or its contractors is conducted under written site-specific health and safety plans. Boeing will ensure that these plans document appropriate training and personal protective equipment required for all personnel that may be exposed to PCBs during work associated with this project. Boeing will make available copies of such plans to the EPA upon request.

This condition ensures that work will be conducted in a safe manner that meets the no unreasonable risk standard of 40 C.F.R. § 761.61(c).

7. Boeing will ensure that a copy of this approval is provided to contractors responsible for conducting work subject to requirements of the approval. Boeing will ensure that any contracts it issues are

consistent with the requirements of this approval. Boeing is responsible for ensuring compliance with this TSCA RBDA and all applicable requirements of 40 C.F.R. Part 761.

This condition emphasizes Boeing's responsibility for acts or omissions of its contractors and that work conducted by Boeing's contractors is consistent with requirements of this approval.

8. Nothing in this approval relieves Boeing of any obligation to comply with the Boeing Order, any other EPA or Ecology administrative action, or any statutory requirements, or rules or regulations applicable to the activities subject to this approval.

This condition establishes that this approval under TSCA does not relieve Boeing of any other obligation that it may have with respect to the approved activities.

9. Within seven (7) days following the effective date of this approval, Boeing will provide the EPA with written or e-mail notice of its project manager responsible for overall implementation of work subject to this approval. The initial EPA TSCA project manager is identified in Condition 12. The respective project managers will be responsible for timely and routine communication regarding implementation of this approval, including notification pursuant to Condition 10. For matters otherwise reportable to the EPA RCRA project manager under the Boeing Order, concurrent notification via e-mail is acceptable and encouraged.

Based on experience during the first construction season for the Duwamish Sediments Other Areas (DSOA) project previously completed by Boeing under a separate RBDA, the EPA and Boeing recognized the need for enhanced communication with respect to this approval based on a project management approach. The EPA is establishing this condition, as well as related language in Condition 11 below, to reflect this objective.

10. If at any time before, during, or after conduct of activities subject to this approval, Boeing possesses or is otherwise made aware of any data or information (including but not limited to site conditions that differ from those presented in the application) that activities approved herein may pose an unreasonable risk of injury to health or the environment, Boeing must report such data or information via facsimile or e-mail to the EPA within five (5) working days at the project manager level, and in writing to the Regional Administrator within thirty (30) calendar days of first possessing or becoming aware of such data or information. At his or her sole discretion, the EPA project manager may waive the written reporting requirement for those issues that are determined to be minor, or can be timely resolved without modification of this Approval. Boeing shall also report in the same manner, new or different information related to a condition or any element of the approved activities if the information is relevant to this approval. The EPA may direct Boeing to take such actions it finds necessary to ensure the approved activities do not pose an unreasonable risk of injury to health or the environment. Boeing shall follow such direction until written approval is obtained from the EPA that finds the condition(s) requiring such direction no longer poses an unreasonable risk of injury to health or the environment.

This condition ensures that if any information not available to the EPA at the time this approval is issued becomes known, it will be promptly made available to the EPA for purposes of ensuring that activities subject to this approval continue to pose no unreasonable risk of injury to health or the environment. This condition also ensures the EPA's ability to make changes to the approved activities, including withdrawing the approval, as necessary to ensure no unreasonable risk of injury to health or the environment.

11. The EPA reserves the right to modify or revoke this approval based on information provided pursuant to Condition 10, or any other information available to the EPA that provides a basis to conclude that activities covered by this approval pose an unreasonable risk of injury to health or the environment. Boeing may request modification of this approval by providing a written request to the EPA. If the EPA agrees with a request for modification, the EPA will provide written approval to Boeing. Prior to obtaining written approval of a modification request, Boeing shall comply with the existing approval conditions.

This condition establishes a mechanism whereby this approval may be modified either independently by the EPA or upon request by Boeing.

Condition 12, not restated here, is self-explanatory.